

What is claimed is:

1. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

5 forming a first conductive film on a substrate;

forming a first dielectric film on said conductive film;

forming a groove for a transmission line passing through said first dielectric film;

10 embedding a second dielectric, whose dielectric constant is larger than that of said first dielectric film, into said groove formed passing through said first dielectric film; and

15 forming a second conductive film on said first dielectric film and said second dielectric film.

2. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 1, wherein a MEMS circuit is fabricated into said substrate.

20 3. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

forming a first conductive film on a substrate;

25 forming on said first conductive film a second dielectric film whose dielectric constant is larger than that of a first dielectric film;

etching said second dielectric film to form a transmission line;

30 embedding said first dielectric film in an area where said second dielectric film has been etched away; and

forming a second conductive film on said first dielectric film and said second dielectric film.

35 4. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 3, wherein a MEMS circuit is fabricated into said substrate.

5. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

forming a conductive film on a substrate;
forming a first sacrificial film on said
conductive film;

5 forming a groove for a transmission line
passing through said first sacrificial film;

embedding a dielectric into said groove
formed passing through said first sacrificial film;

10 forming a second sacrificial layer on said
first sacrificial layer into which said dielectric has
been embedded, and etching away said second sacrificial
layer everywhere except a plurality of portions thereof;

forming a conductive film in an area where
said second sacrificial layer has been etched away; and

15 etching away said first and second
sacrificial layers.

6. A method for fabricating a nonradiative
dielectric waveguide as claimed in claim 5, wherein a
MEMS circuit is fabricated into said substrate.

20 7. A method for fabricating a nonradiative
dielectric waveguide, comprising the steps of:

forming a first dielectric film on a
substrate;

25 forming a groove for a transmission line
to such a depth that does not pass through said first
dielectric film;

embedding a second dielectric, whose
dielectric constant is larger than that of said first
dielectric film, into said groove formed in said first
dielectric film;

30 forming another first dielectric film on
said first dielectric film and said second dielectric
film;

35 forming two grooves one spaced apart from
the other by a distance smaller than the width of said
second dielectric, said grooves being formed down to said
substrate in such a manner as to cut off both edges of
said second dielectric; and

embedding a conductor into each of said two grooves.

8. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 7, wherein a
5 MEMS circuit is fabricated into said substrate.

9. A nonradiative dielectric waveguide comprising:
a first conductive film formed on a substrate; a first
dielectric film formed on said first conductive film; a
10 second dielectric film surrounded by said first
dielectric film and having a dielectric constant larger
than that of said first dielectric film; and a second
conductive film formed on said first and second
dielectric films.

10. A nonradiative dielectric waveguide as claimed
15 in claim 9, wherein a MEMS circuit is fabricated into
said substrate.

11. A nonradiative dielectric waveguide comprising:
a pair of conductors formed vertically on a substrate; a
pair of first dielectric films formed between said
20 conductors and parallel to said substrate; and a second
dielectric film flanked by said first dielectric films
and having a dielectric constant larger than that of said
first dielectric film.

12. A nonradiative dielectric waveguide as claimed
25 in claim 11, wherein a MEMS circuit is fabricated into
said substrate.